

REMARKS

Claims 2-4 and 7-14 are pending in this application. By this Amendment, claims 2-4, 7 and 8 are amended. The amendments introduce no new matter because they are supported by at least the claims as originally filed. Claims 1, 5 and 6 are canceled without prejudice to, or disclaimer of, the subject matter recited in those claims. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

The Office Action, in paragraph 1, rejects claims 1-14 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,233,922 to Maloney. The Office Action, in paragraph 2, rejects claims 1-14 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,019,093 to Kitagawa. The Office Action, in paragraph 3, rejects claims 1-14 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,884,613 to Kitamura et al. (hereinafter "Kitamura"). These rejections are respectfully traversed.

Maloney teaches a closed loop feedback control system for an internal combustion engine (col. 2, lines 58-64). The Office Action indicates that Maloney is alleged to teach the features varyingly recited in the pending claims by stating simply "[s]ee col. 6, lines 5-25, which refers to limit values for the integral term." Kitagawa teaches an air-to-fuel ratio control system for an internal combustion engine (col. 1, lines 6-10). Again, the totality of the statement in the Office Action regarding how the combinations of all of the features recited in the pending claims are believed to be anticipated is "[s]ee col. 11, lines 8-18, which refers to limit values for the integral term."

Kitamura teaches a closed loop air-to-fuel ratio control system that manipulates the integral term to moderate large disturbances (col. 1, line 67 - col. 2, line 5, and col. 2, lines 20-27). In formulating this rejection, the Office Action simply states "[s]ee the abstract." The analysis of the Office Action fails for at least the following reasons.

The specifically cited portion of Maloney discusses predefined minimum and maximum values, as indicated by a limiter. Kitagawa and Kitamura are equally limited in their discussion of limit values specifically referring, however, to predetermined ranges.

Claim 2 recites, among other features, wherein an upper limit value and an lower limit value of the integral term are set based on an actual air intake amount and an actual air fuel ratio, and the upper and lower limit values are set in such a way to reduce the interval between the limit values as the actual intake air amount decreases. Claim 3 recites, among other features, the upper and lower limit values are set in such a way to reduce the absolute value of each limit value as the actual intake air amount decreases. Claim 4 recites, among other features, the upper and lower limit values are set in such a way that air-fuel ratio correction with the integral term of a lean air-fuel ratio is limited as the actual air-fuel ratio becomes leaner. Claim 7 recites, among other features, air-fuel ratio learning control is implemented in which a steady state deviation between the actual air-fuel ratio and the target air-fuel ratio is computed based on the history of difference between the air fuel ratios, and the computed steady state deviation is stored as a learning value, and wherein, until the computation of the steady state deviation is completed, the upper and lower limit values are set in such a way to have a smaller interval between the limit values than that after the computation of the steady state deviation is completed. Claim 8 recites, among other features, air-fuel ratio learning control is implemented, in which a steady state deviation between the actual air-fuel ratio and the target air-fuel ratio is computed based on a history of the difference between the air-fuel ratios, and a computed steady state deviation is stored as a learning value, and wherein, until the computation of the steady state deviation is completed, the upper and lower limit values are set in such a way to each have a smaller absolute value than that after the computation of the steady state deviation is completed.

There is nothing in any of Maloney, Kitagawa or Kitamura that can reasonably be considered to teach features that correspond to every element of these claims, arranged as in the claim. As such, the applied references fall short in meeting the articulated standard for a showing of anticipation of the subject matter of the pending claims. Further, the analysis in the Office Action provides no assistance to the Applicant in analyzing how each of the applied references is reasonably understood to teach, or even to have suggested the combinations of all of the features positively recited in at least independent claims 2-4, 7 and 8.

In reviewing the anticipation standard, the Federal Circuit has stated "[t]o anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375 (Fed. Cir. 2001), *cert. denied*, 122 S. Ct. 1436 (2002) (emphasis added). Additionally, other court precedent clarifies the requirements for anticipation, stating that "the reference ... must clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without any need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference." *In re Arkley*, 455 F.2d 586, 587, 172 USPQ 524 (CCPA 1972); *see also Sandisk Corp. v. Lexar Media, Inc.*, 91 F. Supp. 2d 1327, 1336 (N.D. Calif. 2000) (stating that "[u]nless all the elements are found in a single piece of prior art in exactly the same situation and united the same way to perform the identical function, there is no anticipation.") and *Aero Industries Inc. v. John Donovan Enterprises-Florida Inc.*, 53 USPQ2d 1547, 1555 (S.D. Ind. 1999) (stating that "[n]ot only must a prior patent or publication contain all of the claimed elements of the patent claim being challenged, but they 'must be arranged as in the patented device' "). This standard for anticipation is also set forth in MPEP §2131, which states that "the identical invention must

be shown in as much detail as is contained in the ... claim." Further, although the same terminology need not be used, "the elements must be arranged as required by the claim."

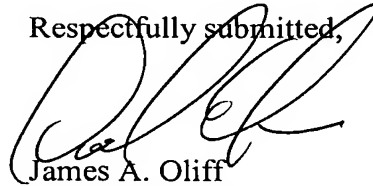
The above-quoted standards are simply not met here. None of the three references can reasonably be relied upon to teach, or to have suggested, the positively recited features in the enumerated claims. There is, for example, no disclosure of a feature that can reasonably be considered to directly connect the setting of the upper and lower integral set points to one or both of the actual air and air-to-fuel values. Also, there is no disclosed feature in any of the three references that can reasonably be considered to correspond to the features of either claim 2 or 7 for reducing the interval between the limit values. The references do not appear to discuss actual air input values as a direct function of setting limit values at all.

For at least the foregoing reasons, none of Maloney, Kitagawa or Kitamura can reasonably be considered to teach, or to have suggested, the combinations of all of the features positively recited in at least claims 2-4, 7 and 8. Further, claims 9-14 are also neither taught, nor would they have been suggested, by the applied references, for at least the respective dependence of these claims directly on allowable base claims 2-4, as well as for the separately patentable subject matter that each of these claims recites.

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 2-4 and 7-14 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's representative at the telephone number set forth below.

Respectfully submitted,



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Attachment:
Amendment Transmittal

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